



Minnesota State University Moorhead
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Geospatial Center Newsletters

Center for Geospatial Studies

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MN GIS/LIS Spring Workshop – Please Provide Input on Remote Offerings

Plans are underway for the 2016 MN GIS/LIS Consortium Spring Workshops to be held on Thursday, May 19th at the University of Minnesota Twin Cities Campus. Once again, MSUM will serve as a remote location for the workshops. We need to hear from you regarding what topics you would like offered in our region! There are a number of sessions currently under consideration, including: Adventures in IT: A Guide for GIS People, Intro to ArcGIS, ArcGIS Online, ArcGIS Server, The ArcGIS App For Every Challenge, Geo Apps, GIS and AutoCad Integration, Open Source, Parcel Fabric, Preparing for NG911, Python, Python in the Field Calculator, Running Enterprise GIS Systems, and SQL 101 - Spatial Data Revealed. If there are workshops in this list that you would like to have remotely delivered, or other topics that you would like to have covered, please email Rinita Dalan (dalanri@mnstate.edu) and she will share this with the organizing committee.

Esri UC 2016

Plans are underway to send a team from MSUM to the San Diego this June to attend the Esri Education and the Esri International User Conferences. We are excited to have broad involvement across university departments, including Andrew Chen (Computer Science and Information), Rinita Dalan (Anthropology and Earth Science), Alexandria Fogarty (Graphic Communications - Interactive Multimedia, School of Media Arts and Design), and T.J. Hansen (Economics, Law and Politics), and we hope to have IT representation as well. If any of you will also be attending, please let us know and perhaps we can meet there. We are looking forward to an inspiring and informative meeting.

HERE Celebrates 20 Years

February 4th, HERE hosted a party at Drekker, Fargo, to celebrate 20 years in the business. It was a great event, with lots of familiar faces and a chance to celebrate their history and accomplishments. We thank them for the invitation to this event and offer our congratulations to HERE and best wishes for the future!

Funding for Technology Requests

The MSUM Student Senate has approved funding requests submitted by Kirk Stueve and Rinita Dalan (Center for Geospatial Studies and the Department of Anthropology and Earth Science) that will enhance teaching and faculty-student research related to GIS. The first, *High-End GPS Receivers for Curriculum Enhancement and Student Research* (\$15,545), will allow the purchase of two Trimble Geo 7 Series handheld GPS devices with Trimble TerraFlex and Trimble GPS Analyst extension software. Together with an existing unit, these will be used in Geos 207 (GPS Field Techniques), building on exercises using Garmin eTrex devices, to teach critical skills in collecting GPS data from the field and processing data in the lab. The Trimble devices will also be used to strengthen faculty-student research related to GIS. The second request funded, *GPS Enhancement for iPads for Mobile Mapping* (\$1,368), will be used to purchase Bluetooth GPS receivers to improve the accuracy of iPads used for mobile mapping (see below).

iPads for Mobile Mapping

A Student Technology Fee Request awarded in May 2015 funded the purchase of 12 iPad Air2 64GB tablets for use in student mobile mapping projects. Also included in this purchase were 12 ruggedized OtterBox cases and a custom charging station/mobile carrying case for 6 iPads. The Center for Geospatial Studies funded the purchase of an additional 6-iPad mobile case. Each iPad has been associated with a generic username in our MSUM ArcGIS online organization and customized user permissions were developed to facilitate appropriate use. Each iPad was then loaded with Esri's ArcGIS, Explorer for ArcGIS, Collector for ArcGIS, and Survey123. Before rolling the iPads out for general checkout, we have been building and testing data collection systems and protocols within the Anthropology and Earth Science department and with students in several courses (Thinking Spatially, GPS Techniques, and Geoarchaeology). Our goal with the Mobile Mapping setup is to maximize opportunities for student use of geospatial technology. Providing data collection experiences with the iPads will not only provide student experiences in mobile data collection projects as part of classes, research, outreach, and other

activities, but it will also introduce them to other resources within our ArcGIS online platform. Currently we have commitments to use the iPads in nearly 20 courses plus a number of faculty-student research projects and summer courses and activities

MSUM Campus Map Initiative Introduced to Pine to Prairie GIS Users Group

MSUM faculty members Rinita Dalan (Anthropology and Earth Science) and T. J. Hansen (Economics, Law & Politics) joined Curtis Atkinson II, Lead System Engineer of HERE-Fargo, to address the Pine to Prairie GIS Users Group on December 9, 2015 in Fergus Falls. The presentation, "Partnering with the MSUM Center for Geospatial Studies: History, Campus Map Initiative, and You," introduced regional GIS users to the center's unique partnership with industry mapping leader, HERE. As part of the Campus Map Initiative, student interns from MSUM employed by HERE developed a 3-D map of the MSUM campus. HERE has also created interior maps of campus buildings as part of the initial phase of an ongoing partnership between these organizations. Representatives of MSUM and HERE answered questions about the Campus Map Initiative and invited those in the Pine to Prairie GIS Users Group to partner with the Center for Geospatial Studies in the future. An outcome of this presentation was a follow-up meeting with Rob Bigelow and Joe Paulsen discussing the participation of Bolton and Menk in the Campus Map project. We are thrilled to see their interest and excited to work with them.

Campus Map Project Youtube Video

In the spring of 2015, MSUM Graphic Communications senior Emily Adcock chose the Camps Map Project as the topic for her Media Arts Minor Capstone Project. The opportunity brought with it the chance to showcase her skills in video, editing, sound, graphic design, and storytelling. Emily's video captures the importance of the project, and the collaboration between HERE and MSUM that is so vital to it. Emily interviewed members of the team including HERE's Brian Carroll, Alycia Gabel and Jay Jonson; MSUM interns Dayna Meshefski, Julian Norby and Austin Swift; and MSUM faculty Rinita Dalan and Alex Fogarty. This video tells the story of the first phase of the Campus Map project. We look forward to future videos as the project progresses. The video can be viewed at:

https://www.youtube.com/watch?v=C7bi0Sk0vms&index=1&list=PLBnp7297XwcnAq1DCEUI0o201MiJB_4LM

GIS Interns in Action

MSUM students Gary George and Tyler Solberg have completed most of their coursework for the GIS Certificate (<https://www.mnstate.edu/geospatial/gis-certificate.aspx>) and are already applying their newly acquired skills as paid interns at the International Water Institute in Fargo, North Dakota (<http://www.iwinst.org/>). GIS procedures and applications are being used at the Institute to create a high-resolution geospatial database for inclusion in the Water Quality Decision Support Application. Gary and Tyler started working at the Institute in January of 2016. They are currently reviewing and correcting LiDAR-derived digital elevation models to account for dam artifacts in the data (i.e., locations where the LiDAR is unable to detect open space under bridges and in culverts). It is imperative to remove dam artifacts because of their negative influences on hydrological flow and accumulation models. Gary and Tyler are also using geospatial tools to calculate new stream path and water catchment boundaries on the corrected digital elevation models. This is an excellent opportunity for students to practice their existing geospatial skills and learn new technical skills in a practical work environment. We are very grateful for this opportunity at the International Water Institute and would like to give special thanks to Chuck Fritz (Director) and Grit May (GIS Specialist). If you have any questions about offering our students similar internship opportunities, please do not hesitate to contact Kirk Stueve (kirk.stueve@mnstate.edu). We are happy to refer qualified students to align with your project and professional expectations.

UAV Agricultural Research in Northwestern MN

MSUM faculty member Kirk Stueve (Anthropology and Earth Science) visited the Northland Community and Technical College campus in Thief River Falls on January 27th to start engaging in the recently

awarded MN Department of Agriculture grant (\$250,000 in January 2015). This is a joint endeavor between Northland, MSUM, local farmers, and agricultural associations and businesses in the region. One goal of the grant is to compare and contrast the efficacy of using unmanned aerial vehicles (UAVs), high-resolution satellite imagery, and yield monitor data to create variable rate fertilizer, seed, pesticide, and herbicide prescriptions for growers in northwestern Minnesota. Particular emphasis is being placed on targeted treatment of herbicide-resistant “superweeds” that are becoming increasingly problematic in the region. A second goal is to develop streamlined protocols for creating the prescriptions so that farmers and other agricultural businesses can integrate the technology into their operations. We are excited about this partnership and over the next several weeks will start recruiting student interns to participate in the study.

Steering Team Appointments and Spring Meetings

The Faculty Association has completed its appointments to the Center for Geospatial Studies Steering Committee. We are thrilled to have members from the library and all five colleges as this attests to the broad applicability and utilization of GIS across campus. We look forward to an exciting and productive two-year term with this exceptionally strong team. Membership includes: from the **Livingston Lord Library, Travis Dolence** (Distance Learning/Web Librarian), from the **College of Arts, Media & Communication, Alexandria Fogarty** (Graphic Communications – Interactive Multimedia, School of Media Arts & Design), from the **College of Business & Innovation, Andrew Chen** (Computer Science & Information Systems), from the **College of Education & Human Services, John Benson** (School of Teaching & Learning), from the **College of Humanities & Social Sciences, Geraldine Hendrix-Sloan** (Sociology & Criminal Justice), and from the **College of Science, Health & the Environment, Rinita Dalan and Paul Sando** (Anthropology & Earth Science) and **Sara Anderson** (Biosciences).

Remaining Steering Committee meetings scheduled for spring 2016 are:

February 25	3-4 pm	MacLean 268
March 24	3-4 pm	MacLean 268
April 21	3-4 pm	MacLean 268

All meetings are open and visitors are encouraged to attend.

Convenient metered parking can be found directly south and west in lots M1-3.

(<http://www.mnstate.edu/uploadedFiles/Content/Parking/Parking%20Map.pdf>)

Spring GIS Courses

GEOS 205 Thinking Spatially T&H 1:30-2:45am Dr. Kirk Stueve	GEOS 210 Cartography T&H 10:30-11:45am Dr. Paul Sando	GEOS 307 Introduction to GIS H 4:30-7:00 pm Dr. Kirk Stueve
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Questions?

For questions regarding the GIS certificate, Steering Committee, or partnerships with the Center, please contact Dr. Rinita Dalan, Chair, Anthropology & Earth Science at 218.477.5900 or dalanri@mnstate.edu.

MSUM GIS

Msum_gis is a mailing list for those with an interest in geospatial applications.

To post to this list, send your email to:

msum_gis@lists.mnstate.edu